

**PATENT APPLICATION****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appl. No. : 10/766,939
Applicant : Fumito Nariyuki
Filed : January 30, 2004
TC/A.U. : 1752
Examiner : Thorl Chea
Docket No : FS-F03228-01
Customer No. : 37398
Conf. No. : 4131

For: **PHOTOTHERMOGRAPHIC MATERIAL AND IMAGE FORMING METHOD**

DECLARATION UNDER 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Fumito NARIYUKI, hereby declare and state:

THAT I am a citizen of Japan;

THAT I graduated from Tokyo University with a masters degree in Chemistry in March 2001;

THAT I joined Fuji Photo Film Co., Ltd. (now FUJIFILM Corporation, hereinafter, "Fuji") in April 2001, and thereafter, I am engaged in the research and development of photothermographic material and apparatus for medical use.

THAT I am the inventor of the subject matter disclosed and claimed in the above-identified application; and

THAT I am familiar with the Office Action of May 16, 2006 and the rejections set forth therein.

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The following additional experiment was carried out by me or under my supervision.

EXPERIMENT

The present experiment demonstrates that a combination of high silver iodide content and an adsorbable redox compound represented by Formula (I), $A-(W)_n-B$, wherein B represents a residue derived from a compound represented by any one of Formulas B_1 to B_5 and Formula B_{13} provides unexpectedly superior results in terms of unprocessed storability. This is additional experimental data to the 37 C.F.R. § 1.132 declaration submitted on March 20, 2006.

The present experiment is conducted in the same manner as in the declaration submitted on March 20, 2006. As adsorbable redox compounds, compound (2), (11), (32) and (34) disclosed in the originally-filed specification on pages 117-120 are additionally used in the same mole amount. Thermal development and evaluation of unprocessed storability are carried out under the same conditions as in Example 1 disclosed in the originally-filed specification. Specifically, the type of radiation used in the imagewise exposure and the temperature in the heating steps are disclosed on page 196 of the specification. Tests are additionally conducted for development time of 5 seconds and 10 seconds.

The photosensitive material contains a polyhalomethane compound represented by Formula (H) as recited in presently-amended claim 1. Sensitivity is calculated at a density of fog density + 3.0, which is on the shoulder of photographic characteristic curve.

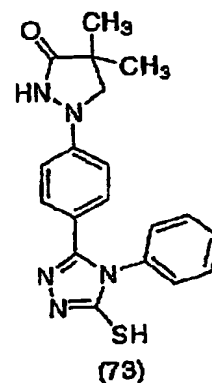
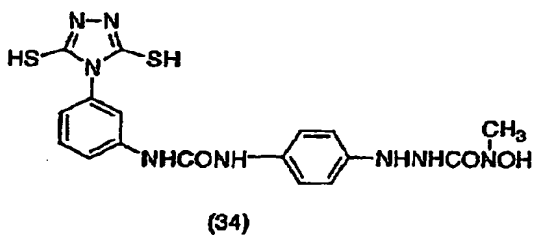
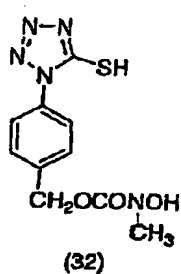
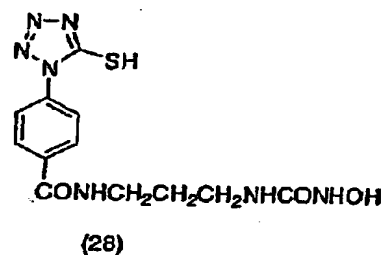
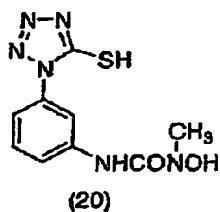
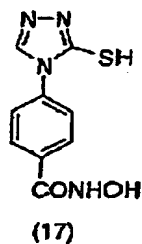
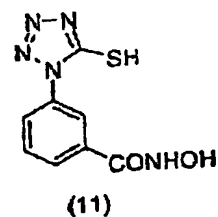
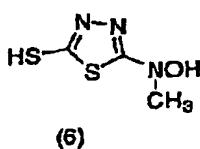
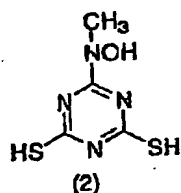
The adsorbable redox compounds used in the present experiment are shown below.

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Formulas (2), (6), (11), (17), (20), (28), (32), (34) and (73) of the present

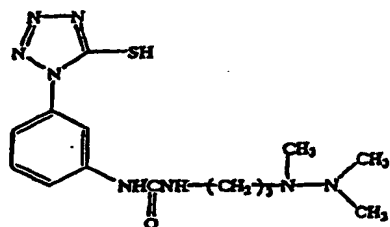
invention:



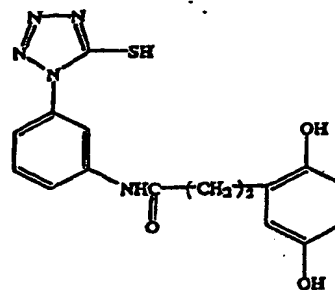
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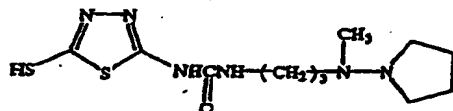
Formulas of 2, 6, 17 and 20 Okada:



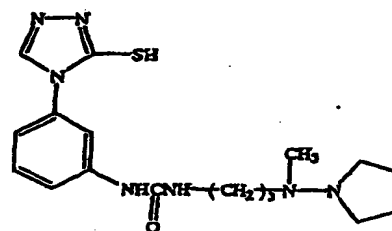
2



6



17



20

Unprocessed storability is evaluated by measuring photographic sensitivity after storage under certain condition. The value of unprocessed storability in Table 1 is expressed in percentage, setting the sensitivity of each sample in a fresh state (i.e. without storage) as 100. The higher value means the better result. Obtained results are shown in Table 1 below.

From the obtained results can be read the following facts.

(i) With the samples containing silver halide emulsion A' which has a silver iodide content as low as 2 mol%, unprocessed storability deteriorates as development time becomes shorter independent from which adsorbable redox compound is used (either those of the present invention or those disclosed in Okada et al. (USP 6,120,983, hereinafter "Okada")).

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(ii) Even if the silver iodide content is as high as 40-100 mol%, unprocessed storability deteriorates as development time shortens with Okada's adsorbable redox compounds 2, 17 and 20.

(iii) Unexpectedly superior results of 10% improvement of unprocessed storability are obtained with development time of 10 and 12 seconds compared to 15 seconds with the samples of the present invention using the combination of adsorbable redox compounds (2), (6), (11), (17), (20), (28), (32), (34) or (73) and silver iodide content of 40-100 mol%.

(iv) Generally speaking, unprocessed storability largely decreases with a short development time such as 5 seconds. However, 15% to 20% improvement of unprocessed storability are obtained with development time of 5 seconds by using the samples of the present invention using the combination of adsorbable redox compounds (2), (6), (11), (17), (20), (28), (32), (34) or (73) and silver iodide content of 40-100 mol%. These results are unexpectedly superior to the results of the above (i) (i.e. low silver iodide content) and (ii) (i.e. Okada's adsorbable redox compounds).

Table 1

Sample	Thermal Development Time (sec)	Silver Halide Emulsion	Adsorbable Reducing Agent	Unprocessed Storability (%)	Remarks
5a	15	A'	Okada 2	68	Comparative
5a	12	A'	Okada 2	68	Comparative
5a	10	A'	Okada 2	64	Comparative
5a	5	A'	Okada 2	55	Comparative
6a	15	2	Okada 2	65	Comparative
6a	12	2	Okada 2	64	Comparative
6a	10	2	Okada 2	62	Comparative
6a	5	2	Okada 2	60	Comparative
7a	15	3	Okada 2	68	Comparative
7a	12	3	Okada 2	67	Comparative
7a	10	3	Okada 2	64	Comparative
7a	5	3	Okada 2	60	Comparative

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8a	15	4	Okada 2	70	Comparative
8a	12	4	Okada 2	68	Comparative
8a	10	4	Okada 2	65	Comparative
8a	5	4	Okada 2	58	Comparative
5b	15	A'	Invention 20	68	Comparative
5b	12	A'	Invention 20	68	Comparative
5b	10	A'	Invention 20	66	Comparative
5b	5	A'	Invention 20	58	Comparative
6b	15	2	Invention 20	68	Comparative
6b	12	2	Invention 20	78	Invention
6b	10	2	Invention 20	75	Invention
6b	5	2	Invention 20	74	Invention
7b	15	3	Invention 20	70	Comparative
7b	12	3	Invention 20	77	Invention
7b	10	3	Invention 20	80	Invention
7b	5	3	Invention 20	74	Invention
8b	15	4	Invention 20	72	Comparative
8b	12	4	Invention 20	82	Invention
8b	10	4	Invention 20	85	Invention
8b	5	4	Invention 20	78	Invention
5c	15	A'	Okada 6	70	Comparative
5c	12	A'	Okada 6	68	Comparative
5c	10	A'	Okada 6	66	Comparative
5c	5	A'	Okada 6	58	Comparative
6c	15	2	Okada 6	67	Comparative
6c	12	2	Okada 6	67	Comparative
6c	10	2	Okada 6	65	Comparative
6c	5	2	Okada 6	58	Comparative
7c	15	3	Okada 6	70	Comparative
7c	12	3	Okada 6	70	Comparative
7c	10	3	Okada 6	68	Comparative
7c	5	3	Okada 6	60	Comparative
8c	15	4	Okada 6	73	Comparative
8c	12	4	Okada 6	72	Comparative
8c	10	4	Okada 6	68	Comparative
8c	5	4	Okada 6	62	Comparative
5d	15	A'	Invention 28	70	Comparative
5d	12	A'	Invention 28	70	Comparative

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5d	10	A'	Invention 28	68	Comparative
5d	5	A'	Invention 28	62	Comparative
6d	15	2	Invention 28	70	Comparative
6d	12	2	Invention 28	80	Invention
6d	10	2	Invention 28	80	Invention
6d	5	2	Invention 28	70	Invention
7d	15	3	Invention 28	70	Comparative
7d	12	3	Invention 28	82	Invention
7d	10	3	Invention 28	80	Invention
7d	5	3	Invention 28	72	Invention
8d	15	4	Invention 28	75	Comparative
8d	12	4	Invention 28	86	Invention
8d	10	4	Invention 28	88	Invention
8d	5	4	Invention 28	80	Invention
5e	15	A'	Okada 17	72	Comparative
5e	12	A'	Okada 17	69	Comparative
5e	10	A'	Okada 17	67	Comparative
5e	5	A'	Okada 17	60	Comparative
6e	15	2	Okada 17	70	Comparative
6e	12	2	Okada 17	70	Comparative
6e	10	2	Okada 17	68	Comparative
6e	5	2	Okada 17	63	Comparative
7e	15	3	Okada 17	73	Comparative
7e	12	3	Okada 17	73	Comparative
7e	10	3	Okada 17	70	Comparative
7e	5	3	Okada 17	62	Comparative
8e	15	4	Okada 17	74	Comparative
8e	12	4	Okada 17	74	Comparative
8e	10	4	Okada 17	72	Comparative
8e	5	4	Okada 17	65	Comparative
5f	15	A'	Invention 6	74	Comparative
5f	12	A'	Invention 6	74	Comparative
5f	10	A'	Invention 6	72	Comparative
5f	5	A'	Invention 6	62	Comparative
6f	15	2	Invention 6	75	Comparative
6f	12	2	Invention 6	86	Invention
6f	10	2	Invention 6	88	Invention
6f	5	2	Invention 6	76	Invention
7f	15	3	Invention 6	76	Comparative

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7f	12	3	Invention 6	88	Invention
7f	10	3	Invention 6	88	Invention
7f	5	3	Invention 6	76	Invention
8f	15	4	Invention 6	77	Comparative
8f	12	4	Invention 6	93	Invention
8f	10	4	Invention 6	92	Invention
8f	5	4	Invention 6	80	Invention
5g	15	A'	Okada 20	68	Comparative
5g	12	A'	Okada 20	69	Comparative
5g	10	A'	Okada 20	65	Comparative
5g	5	A'	Okada 20	55	Comparative
6g	15	2	Okada 20	68	Comparative
6g	12	2	Okada 20	70	Comparative
6g	10	2	Okada 20	66	Comparative
6g	5	2	Okada 20	58	Comparative
7g	15	3	Okada 20	70	Comparative
7g	12	3	Okada 20	70	Comparative
7g	10	3	Okada 20	68	Comparative
7g	5	3	Okada 20	60	Comparative
8g	15	4	Okada 20	72	Comparative
8g	12	4	Okada 20	72	Comparative
8g	10	4	Okada 20	70	Comparative
8g	5	4	Okada 20	60	Comparative
5h	15	A'	Invention 17	72	Comparative
5h	12	A'	Invention 17	71	Comparative
5h	10	A'	Invention 17	72	Comparative
5h	5	A'	Invention 17	60	Comparative
6h	15	2	Invention 17	70	Comparative
6h	12	2	Invention 17	82	Invention
6h	10	2	Invention 17	88	Invention
6h	5	2	Invention 17	74	Invention
7h	15	3	Invention 17	72	Comparative
7h	12	3	Invention 17	82	Invention
7h	10	3	Invention 17	88	Invention
7h	5	3	Invention 17	80	Invention
8h	15	4	Invention 17	75	Comparative
8h	12	4	Invention 17	93	Invention
8h	10	4	Invention 17	95	Invention
8h	5	4	Invention 17	82	Invention

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5i	15	A'	Invention 73	70	Comparative
5i	12	A'	Invention 73	70	Comparative
5i	10	A'	Invention 73	72	Comparative
5i	5	A'	Invention 73	62	Comparative
6i	15	2	Invention 73	71	Comparative
6i	12	2	Invention 73	82	Invention
6i	10	2	Invention 73	84	Invention
6i	5	2	Invention 73	72	Invention
7i	15	3	Invention 73	73	Comparative
7i	12	3	Invention 73	86	Invention
7i	10	3	Invention 73	86	Invention
7i	5	3	Invention 73	74	Invention
8i	15	4	Invention 73	74	Comparative
8i	12	4	Invention 73	88	Invention
8i	10	4	Invention 73	88	Invention
8i	5	4	Invention 73	76	Invention
5j	15	A'	Invention 2	75	Comparative
5j	12	A'	Invention 2	73	Comparative
5j	10	A'	Invention 2	76	Comparative
5j	5	A'	Invention 2	66	Comparative
6j	15	2	Invention 2	75	Comparative
6j	12	2	Invention 2	85	Invention
6j	10	2	Invention 2	88	Invention
6j	5	2	Invention 2	76	Invention
7j	15	3	Invention 2	77	Comparative
7j	12	3	Invention 2	90	Invention
7j	10	3	Invention 2	89	Invention
7j	5	3	Invention 2	80	Invention
8j	15	4	Invention 2	79	Comparative
8j	12	4	Invention 2	92	Invention
8j	10	4	Invention 2	92	Invention
8j	5	4	Invention 2	83	Invention
5k	15	A'	Invention 11	70	Comparative
5k	12	A'	Invention 11	68	Comparative
5k	10	A'	Invention 11	66	Comparative
5k	5	A'	Invention 11	55	Comparative
6k	15	2	Invention 11	68	Comparative
6k	12	2	Invention 11	83	Invention

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6k	10	2	Invention 11	83	Invention
6k	5	2	Invention 11	70	Invention
7k	15	3	Invention 11	74	Comparative
7k	12	3	Invention 11	88	Invention
7k	10	3	Invention 11	85	Invention
7k	5	3	Invention 11	77	Invention
8k	15	4	Invention 11	75	Comparative
8k	12	4	Invention 11	90	Invention
8k	10	4	Invention 11	90	Invention
8k	5	4	Invention 11	80	Invention
5l	15	A'	Invention 32	68	Comparative
5l	12	A'	Invention 32	66	Comparative
5l	10	A'	Invention 32	66	Comparative
5l	5	A'	Invention 32	55	Comparative
6l	15	2	Invention 32	70	Comparative
6l	12	2	Invention 32	79	Invention
6l	10	2	Invention 32	80	Invention
6l	5	2	Invention 32	70	Invention
7l	15	3	Invention 32	72	Comparative
7l	12	3	Invention 32	80	Invention
7l	10	3	Invention 32	82	Invention
7l	5	3	Invention 32	76	Invention
8l	15	4	Invention 32	74	Comparative
8l	12	4	Invention 32	85	Invention
8l	10	4	Invention 32	85	Invention
8l	5	4	Invention 32	80	Invention
5m	15	A'	Invention 34	65	Comparative
5m	12	A'	Invention 34	65	Comparative
5m	10	A'	Invention 34	65	Comparative
5m	5	A'	Invention 34	52	Comparative
6m	15	2	Invention 34	66	Comparative
6m	12	2	Invention 34	75	Invention
6m	10	2	Invention 34	74	Invention
6m	5	2	Invention 34	68	Invention
7m	15	3	Invention 34	72	Comparative
7m	12	3	Invention 34	82	Invention
7m	10	3	Invention 34	83	Invention
7m	5	3	Invention 34	75	Invention
8m	15	4	Invention 34	72	Comparative

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8m	12	4	Invention 34	85	Invention
8m	10	4	Invention 34	86	Invention
8m	5	4	Invention 34	78	Invention

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Fumito Maruyuki

Fumito Nariyuki